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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/038,968	12/31/2001	Rajendran S. Michael	24975A	2158
22889	7590	01/26/2005	EXAMINER	
OWENS CORNING 2790 COLUMBUS ROAD GRANVILLE, OH 43023			BOYD, JENNIFER A	
			ART UNIT	PAPER NUMBER
			1771	

DATE MAILED: 01/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/038,968		MICHAEL ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Jennifer A Boyd		1771	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 November 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 5-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 5-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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## **DETAILED ACTION**

### ***Response to Amendment***

1. The Applicant's Amendments and Accompanying Remarks, filed November 16, 2004, have been entered and have been carefully considered. Claims 1 and 5 – 9 are pending and claims 10 – 14 are withdrawn. In view of Applicant's statement that the previously applied reference to Tilton (US 2003/0008581) was commonly owned at the time the instant invention was made, the Examiner withdraws the previously set forth rejection as detailed in paragraph 3 of the Office Action dated September 8, 2004. However, after an updated search, additional prior art has been found which renders the invention as currently claimed to be unpatentable for reasons herein below.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Claim Rejections - 35 USC § 103***

3. Claims 1, 6 and 7 – 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwasa et al. (US 5,744,763) in view of Bae et al. (US 5,034,443).

Iwasa is directed to a soundproofing insulator (Title) to be applied to automobile hoods, roof panels, floor panels or engine covers and to prevent noises from propagating outside or within the interior of a vehicle (column 1, lines 5 – 15).

As to claim 1, Iwasa teaches a soundproofing material comprising a pulverized rubber

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layer 11 containing rubber grains and outer covering layers 12 covering the pulverized rubber layer 11 (column 4, lines 55 – 65). Iwasa teaches that the covering layers 12 can comprise a nonwoven fabric and can contain natural fiber material such as cotton or synthetic resin material such as polyvinyl chloride (column 5, lines 15 – 25). It should be noted that cotton is a staple fiber and, therefore, the Examiner equates the non-woven fabric of cotton to Applicant's mat of "chopped fibers". The Examiner equates the non-woven fabric layers or outer covering layers 12 to Applicant's "first and second structural layers" and the pulverized rubber layer 11 to Applicant's "insulating layer". According to embodiment 6 shown in Figures 10 and 11, a plurality of high-density portions 61 are formed by partly compressing the lower covering layer 12 to provide portions thinner than the uncompressed portions of the rubber grain layer 11 (column 9, lines 10 – 25). See Figure 10. The compressed areas are equated to Applicant's "at least one compacted area" and the thicker areas are equated to Applicant's "at least one lofted area". It should be noted that all structural limitations have been met, therefore, the Examiner submits that the compressed areas would inherently structurally enhance the liner and the thicker areas would inherently insulate against the transmission of sound and heat energy.

As to claim 6, Iwasa teaches that the covering layers 12 can contain natural fiber material such as cotton (column 5, lines 15 – 25).

As to claim 7, Iwasa shows in the seventh embodiment that the soundproofing material comprises a plurality of dimple-like or hemispherical noise absorbing recesses 71 and ridges 72 (column 9, lines 60 – 67). See Figures 12 and 13. It is shown in the Figures that there are regions of various thicknesses. The Examiner equates the thicker areas to Applicant's "first and second lofted areas" and the thinner areas to Applicant's "first and second compacted areas". It should

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be noted that the lofted areas by virtue would have a dimension greater than the dimension of the compressed areas.

As to claim 9, Iwasa is directed to a soundproofing insulator (Title) to be applied to automobile hoods, roof panels, and to prevent noises from propagating outside or within the interior of a vehicle (column 1, lines 5 – 15). The Examiner equates these intended uses to Applicant's "headliner".

Iwasa fails to teach that the non-woven mat includes a polyvinyl chloride polymeric material and a heat stabilizer.

Bae is directed to stabilizer composition for polyvinyl chloride resins and to improved resistance to degradation caused by heat useful in applications such as motor vehicle components (column 1, lines 5 – 20) such as headliners (column 5, lines 50 – 55). Bae teaches a polyvinyl chloride molded article stabilized by various heat stabilizers to provide resistance to the polyvinyl resin to deterioration, discoloration, reduction in melt viscosity and embrittlement (column 3, lines 45 – 55). Bae notes that the polyvinyl chloride resins can be shaped by standard plastics processing techniques and can be formed into a wide variety of motor vehicle parts for both interior and exterior use (column 5, lines 40 – 55).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate vinyl chloride as suggested by Bae into the nonwoven covering layers of Iwasa motivated by the desire to use a commonly employed material for headliner materials which can be easily molded by conventional techniques.

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It would have been obvious to incorporate heat stabilizer as suggested by Bae into the nonwoven covering layers of Iwasa motivated by the desire to create a headliner material which has superior resistance against deterioration, heat stability, reduction in melt viscosity and embrittlement.

As to claim 8, Iwasa in view of Bae discloses the claimed invention except for that the “first lofted area” has a thickness equal to about 3 to 25 times the thickness of the “first compacted area”. It should be noted that the thickness is a result effective variable. For example, as thickness increases, the layer becomes more rigid and provides a more insulating effect and as the thickness decreases, the layer becomes more flexible and provides a more structural supporting effect. It would have been obvious to one having ordinary skill in the art at the time the invention was made to create a composite with “first lofted area” has a thickness equal to about 3 to 25 times the thickness of the “first compacted area”, since it has been held that where general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 220 F.2d 454 USPQ 233 (CCPA 1955). In the present invention, one would have been motivated to optimize the thickness of both the “first lofted area” and the “first compacted area” to create the “first lofted area” having a thickness of 3 to 25 times the thickness of the “first compacted area” to optimize the insulating and structural support strength of the composite.

4. Claims 1 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haussling (US 4,828,910) in view of Bae et al. (US 5,034,443).

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Hausling is directed to a three-dimensional contoured article for applications such as automobile headliners (column 1, lines 5 – 10).

As to claim 1, Hausling teaches a laminate comprising a porous fibrous batt interior core member 3 having two outer surfaces each of which is bonded to the fibrous, porous reinforcing mats 2 and 4 (column 2, lines 20 – 37). The Examiner equates the core to Applicant's "insulating layer" and the reinforcing mats to Applicant's "first and second structural layers". Hausling teaches that the reinforcing mats 2 and 4 can comprise a plurality of chopped glass fibers bonded together by a thermoformable resin (column 4, lines 37 – 45). As shown in Figure 2, the edges of the laminate are compacted resulting in a lofted area and two compacted areas. It should be noted that all structural limitations have been met, therefore, the Examiner submits that the compressed areas would inherently structurally enhance the liner and the thicker areas would inherently insulate against the transmission of sound and heat energy.

As to claim 5, Hausling teaches that the core can comprise a fibrous batt (column 2, lines 38 – 42). Hausling notes that the resilience and porosity of the batt core is believed to be important to the sound absorbing/deadening characteristics of the laminate (column 2, lines 45 – 55). Hausling teaches that the batt is needled (column 2, lines 50 – 55). The Examiner equates Applicant's core to a "needled fiber mat".

Hausling fails to teach that the non-woven mat includes a polyvinyl chloride binder material and a heat stabilizer.

Bae is directed to stabilizer composition for polyvinyl chloride resins and to improved resistance to degradation caused by heat useful in applications such as motor vehicle components

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(column 1, lines 5 – 20) such as headliners (column 5, lines 50 – 55). Bae teaches a polyvinyl chloride molded article stabilized by various heat stabilizers to provide resistance to the polyvinyl resin to deterioration, discoloration, reduction in melt viscosity and embrittlement (column 3, lines 45 – 55). Bae notes that the polyvinyl chloride resins can be shaped by standard plastics processing techniques and can be formed into a wide variety of motor vehicle parts for both interior and exterior use (column 5, lines 40 – 55).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate vinyl chloride as suggested by Bae into the nonwoven covering layers of Haussling motivated by the desire to use a commonly employed material for headliner materials which can be easily molded by conventional techniques.

It would have been obvious to incorporate heat stabilizer as suggested by Bae into the nonwoven covering layers of Haussling motivated by the desire to create a headliner material which has superior resistance against deterioration, heat stability, reduction in melt viscosity and embrittlement.

### ***Response to Arguments***

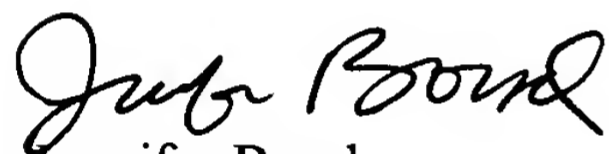
5. Applicant's arguments with respect to claims 1 and 5 – 9 have been considered but are moot in view of the new ground(s) of rejection.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A Boyd whose telephone number is 571-272-1473. The examiner can normally be reached on Monday thru Friday (8:30am - 6:00pm).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Jennifer Boyd  
January 19, 2005

  
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